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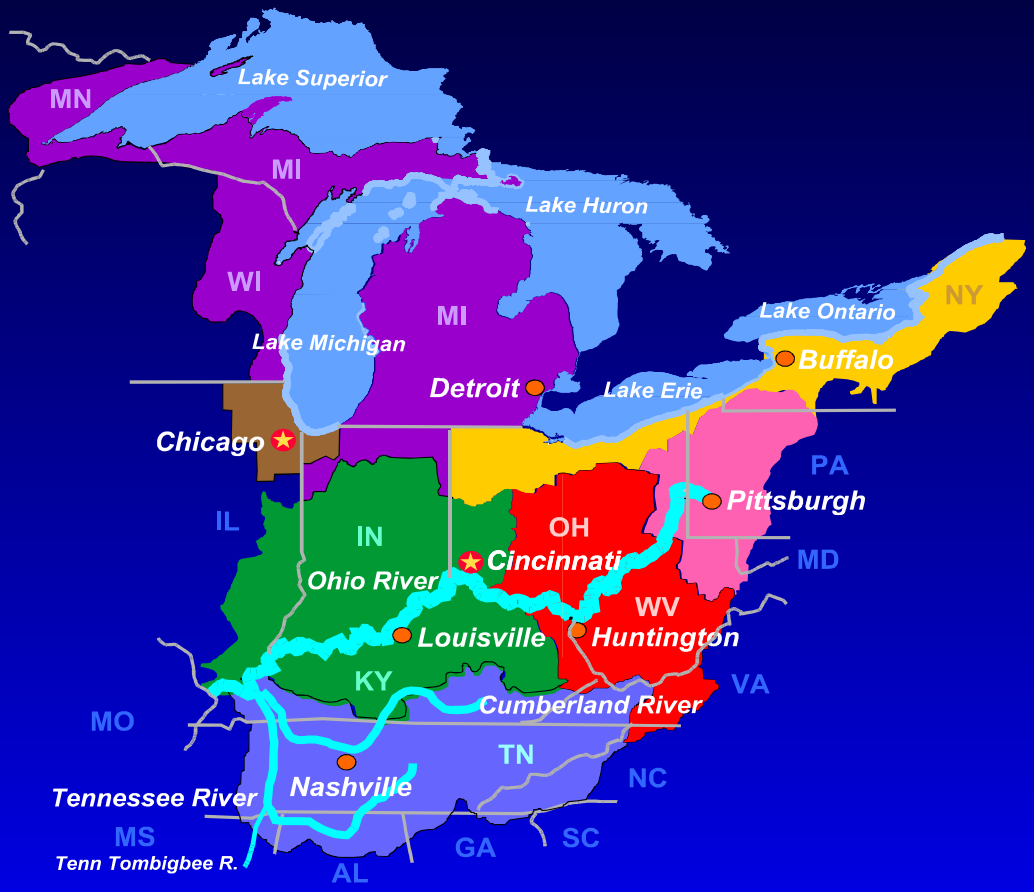
# *LRD Sub regional Navigation Maintenance PDT*

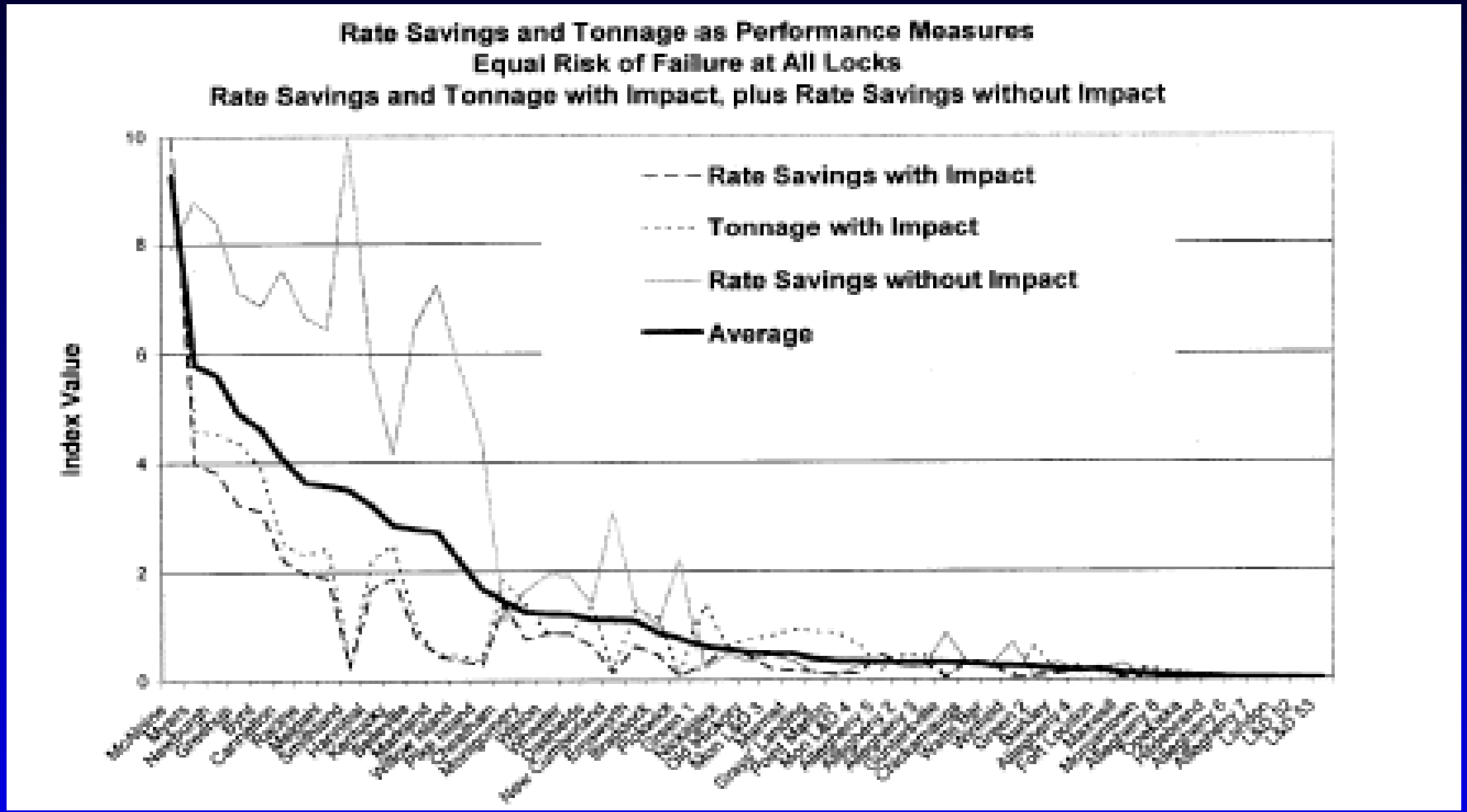



**Bob Willis**
**Operations Chief**

## *LRD Sub-Regional Navigation Maintenance PDT*

Primary Objective

- Develop LRD Division Maintenance Standard for navigation Locks and dams.


Rate Savings and Tonnage as Performance Measures
Equal Risk of Failure at All Locks
Rate Savings and Tonnage with Impact, plus Rate Savings without Impact
Index Value
10
8
6
4
2
0
Rate Savings with Impact
Tonnage with Impact
Rate Savings without Impact
Average

9. Special Considerations. This regulation does not specifically include the Great Lakes navigation projects Black Rock Lock, Chicago Lock, or Soo Locks, nor does it include Locks 52 and 53 on the Ohio River. These projects were omitted from statistical comparison with the other LRD projects because of their unique operational or design characteristics. For example, Locks 52 and 53 are high-impact projects but since they remain inundated for extended periods and since their design features prohibit dewatering, they are excluded. Similarly, Chicago Lock and Soo Lock are inherently high impact but do not conform to the statistical matrices used in determining impact criticality. The only project of these five not considered high impact is Black Rock Lock. Soo Locks, Chicago Lock, and Locks and Dam 52 and 53 will have an assigned impact value greater than 2. Black Rock Lock will have an assigned impact value of less than 1.

# *LRD Sub-Regional Navigation Maintenance PDT*

Team Members

Bob Willis – LRD – Team Sponsor
Kareem El-Naggar – LRD – Program Manager
David Bethurum LRN – Team Leader
Dan Butcher – LRD
Jeff Ross – LRN
John Cheek – LRL
Rick Lewis – LRL
Domenico Chianesi – LRH
Tim Fudge – LRH
Jim Fisher – LRP
Mark Lisney - IWR

## *LRD Sub-Regional Navigation Maintenance PDT*

Regulation Format

Purpose – Establish Division Standard

Applicability – All Navigation L&D's within LRD

References – As Noted

General Policy

Appendix A – Assessments and Inspections

Appendix B – LRD Risk Assessment/Assignment

Appendix C – LRD Process for Identifying Impact and Prioritization for Navigation Locks and Dams

# Appendix A - LRD Standard Assessment and Inspecti

## Inspection Team:

- Lockmaster
- Lock Maintenance Leader
- Operations Manager
- Navigation Maintenance Coordinator
- Project Engineer

# Appendix A – LRD Standard Assessment and Inspection

## Inspection Procedure:

- Review previous years assessment
- Review most recent underwater inspection
- Review most recent periodic inspection
- Walkthrough of entire facility
- Recap generated list of maintenance items

# Appendix A – LRD Standard Assessment and Inspection

Dive Inspections will be performed as follows:

- Lock chambers at high impact projects – Inspect once per yr
- Remaining lock chambers – Inspect at least every 4 yrs
- Navigation dam structures – Inspect on a 5 yr rotation
- Districts may increase inspection frequency based on findings
- Final reports are due within 90 days of inspection

# Appendix A – LRD Standard Assessment and Inspection

## Lock Dewatering Inspection Intervals

- Main Lock Chambers – Impact Level > 2 → every 7 years
- Main Lock Chambers – Impact Level > 1 but < 2 → every 10 years
- Main Lock Chambers – Impact Level <1 under special circumstances
- Auxiliary Lock Chambers – At the discretion of the District

# Appendix B – LRD Risk Assessment/Assignment

Risk value based on the following factors:

- Number of operating cycles since last inspection
- Age of facility
- Historical maintenance performed

Risk classified as follows:

- High – Probable failure of components – Unscheduled closure
- Medium – Probable failure of components – No unscheduled closure but would degrade services in next 3 years
- Low – Deficiency identified – No degradation of

# Appendix C – LRD Process for Identifying Impact and Prioritization for Navigation Locks and Dams

Impact Measures:

- Commodity Value
- Transportation Rate Savings
- Total Project Benefits

# Appendix C – LRD Process for Identifying Impact and Prioritization for Navigation Locks and Dams

## Division Baseline Impact Curve

- Curve Description – Composed of normalized impact index values
- Includes every lock in the Ohio River Basin that has commercial traffic
- Impact multiplier – Based on availability of alternate chamber

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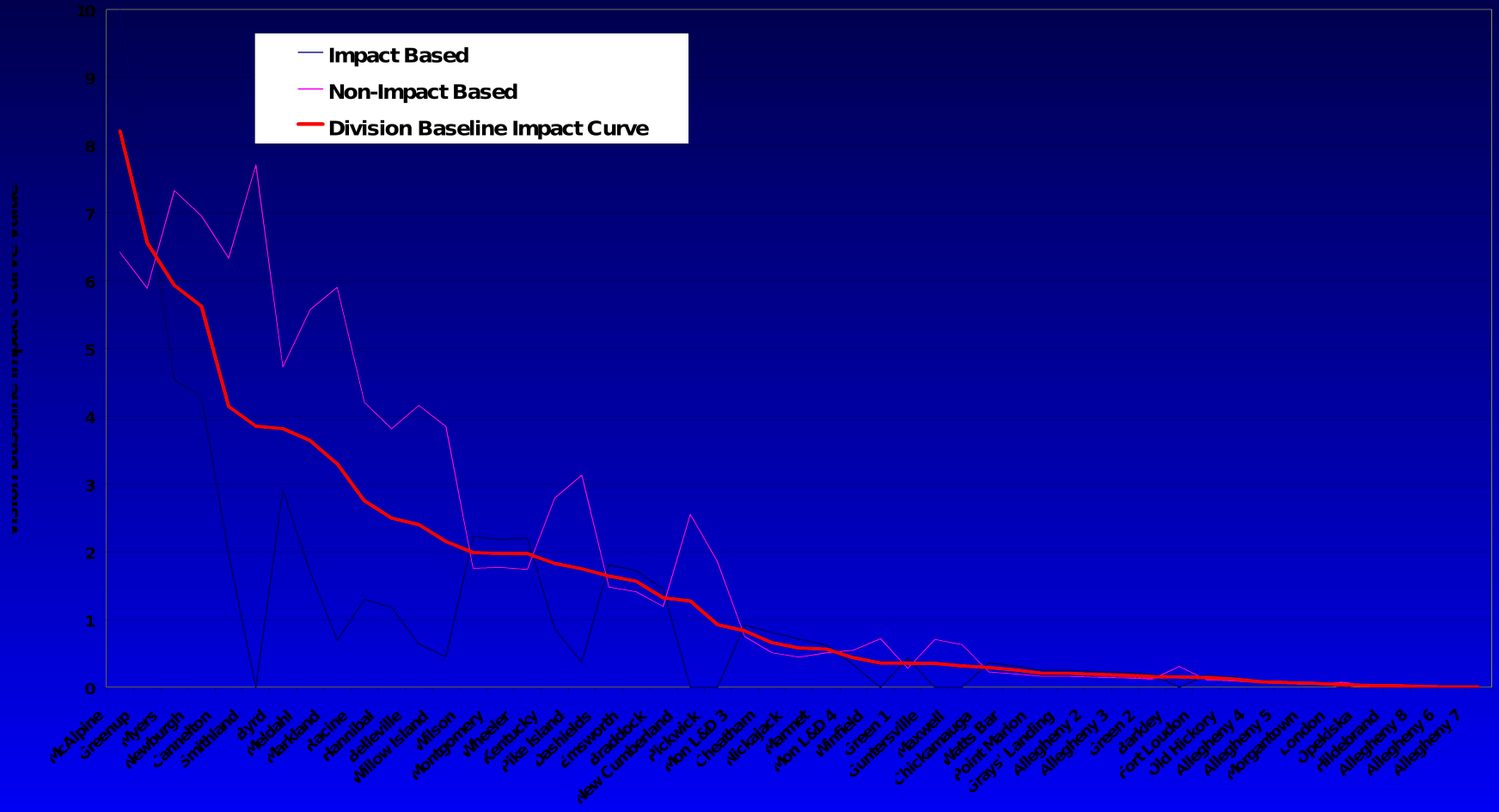

## Conclusions

- Establish LRD Maintenance Standard for Navigation Locks and Dams.

- Next Initiative – Fleet Regionalization.